Notice of Allowability	Application No.	Applicant(s)	
	09/893,222	AMES ET AL.	
	Examiner	Art Unit	
	Nathan Curs	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Order Returning Undocketed Appeal to Examiner of 29 December 2005*.

2. ☒ The allowed claim(s) is/are *1-3,5,10-19,21 and 24*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

M. R. Sedighian

M. R. SEDIGHIAN
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Patent Agent Robert Williams gave authorization for this examiner's amendment via email on 2 February 2006.

The claims of 25 June 2004 should been amended as follows:

1. ~~A data rate detector, comprising: an input interface to receive a digital signal having a data rate that is one of at least two known data rates, a passing frequency-selective filter assembly coupled to the input interface and includes a first filter to pass a signal when at least a selected difference of spectral power at a first selected filtered frequency exists between the one known data rate of the signal relative to the other of the two known data rates of the filter; and, a signal detector coupled to the filter to detect the passed signal and output a data rate signal related thereto.~~

A data rate detector, comprising: an input interface to receive a digital signal having a data rate that is one of N known data rates; a passing frequency-selective filter assembly coupled to the input interface and including N-1 bandpass filters, each bandpass filter corresponding to a different one of the N known data rates; and each bandpass filter configured to pass a signal when a selected spectral power difference exists at the bandpass frequency between the data rate of the digital signal and a selected one of the other N known data rates; and N-1 signal detectors each coupled to a

corresponding one of the N-1 bandpass filters; and each signal detector configured to detect the passed signal from the corresponding bandpass filter and each signal detector configured to output a data rate signal related to the passed signal; and wherein each bandpass filter includes a reference clock coupled thereto.

2. The data rate detector of claim 1, wherein the ~~pre~~selected spectral power difference is the difference **at the bandpass frequency** between the spectral power value of ~~one of the two known data rates~~ **the data rate of the digital signal** ~~compared to~~ **and** a corresponding spectral power value of a null of **the selected one of the other of the N known data rates** ~~at the preselected filtered frequency~~.

3. The data rate detector of claim 1, wherein the ~~two~~ **N** known data rates are integer multiples of each other.

4. **(Canceled)**

5. The data rate detector of claim 1 wherein ~~the first~~ **each bandpass** filter includes a tunable **bandpass** filter that includes logic to pass **a signal corresponding to any one of a plurality of the N known data rates, the tunable bandpass filter operable for** ~~multiple rates by~~ adjusting the **bandpass frequency to correspond to a** first null of the ~~one known~~ **digital signal** data rate.

6. **(Canceled)**

7. **(Canceled)**

8. **(Canceled)**

9. **(Canceled)**

10. The data rate detector of claim **1** ~~9~~, wherein ~~the first~~ **each bandpass** filter is a tunable **bandpass** filter that is operable for adjusting **the bandpass frequency to correspond to** a first null of the ~~one known~~ **digital signal** data rate ~~at the selected filtered frequency~~.

11. The data rate detector of claim **1** ~~9~~, wherein ~~the first~~ **each bandpass** filter is an active filter.

12. The data rate detector of claim **11** ~~12~~, wherein ~~the~~ **each** active filter comprises a DSP filter.

13. An optical transceiver, comprising: (a) an optical receiver having a photodetector to receive an optical input at an input interface and a transimpedance amplifier to generate an output electrical signal in response thereto, ~~(b) a frequency-selective filter assembly coupled to the input interface and includes a first filter to piss a signal when at least a selected difference of spectral power at a first selected filtered frequency exists between one known data rate relative to the other of two known data rates; and, a signal detector coupled to the filter to detect the passed signal and output a data rate signal related thereto;~~ **(b) a frequency-selective filter assembly coupled to the input interface and including N-1 bandpass filters, each bandpass filter corresponding to a different one of N known data rates; and each bandpass filter configured to pass a signal when a selected spectral power difference exists at the bandpass frequency between the data rate of the input signal and a selected one of the other N known data rates; and N-1 signal detectors each coupled to a corresponding one of the N-1 bandpass filters; and each signal detector configured to detect the passed signal from the corresponding bandpass filter and each signal detector configured to output a corresponding data rate signal related to the passed signal; and wherein each bandpass filter includes a reference clock coupled thereto;** (c) a post amplifier connected to the signal ~~rate detector~~ **detectors** and the optical receiver; (d) a host interface connected to couple outputs of the signal ~~rate detector~~ **detectors** and the post amplifier to a host system; and in response to the output of the signal ~~rate detector~~ **detectors,** the optical receiver and/or the transimpedance amplifier and/or the post amplifier and/or the

host adapt to a **the data** rate ~~of transmission~~ of the optical input.

14. The optical transceiver of claim 13, further comprising: (a) an ac modulator to receive host input through the host interface and generate an electrical output; and (b) an optical transmitter to receive the electrical output of the ac modulator and in response thereto generate an optical output.

15. The optical transceiver of claim 14, wherein the optical output is at the **data** rate ~~of transmission~~ of the optical input.

16. The optical transceiver of claim 14, wherein the optical transmitter is a laser.

17. A method of detecting the ~~transmission~~ **data** rate of a data signal, comprising: (a) receiving the data signal having ~~the transmission~~ **a data** rate that ~~could be~~ **is** one of ~~at least two~~ **N** known data rates; (b) utilizing a frequency-selective filter assembly including ~~a first filter~~ **N-1 bandpass filters, each bandpass filter corresponding to a different one of the N known data rates and each bandpass filter** ~~for~~ passing **a** signal ~~if the incoming received data rate exists at the preselected filtered frequency and comparing the signal power to the selected spectral power level~~ **when a selected spectral power difference exists at the bandpass frequency between the data rate of the data signal and a selected one of the other of the N known data rates; and each bandpass filter receiving a reference clock and filtering based on the received reference clock;** and, (c) passing an output from ~~the~~ **each bandpass** filter to a **corresponding** signal detector and outputting a data rate signal from ~~the~~ **each** signal detector.

18. The method of claim 17, wherein the ~~pre~~selected **power** difference is the difference **at the bandpass frequency** in spectral power between a null of the **data rate of the** data signal ~~at one of the two known data rates compared to~~ **and** a corresponding spectral power value at the **selected one of the** other ~~of the two~~ **N** known data rates.

19. The method of claim 18, wherein the data rate signal has a voltage indicative of the ~~transmission~~ **data** rate.

20. **(Canceled)**

21. The method of claim 19 wherein ~~the~~ **each** bandpass filtering step is accomplished by an active filter.

22. **(Canceled)**

23. **(Canceled)**

24. ~~A data rate detector, comprising: an input interface to receive a signal having a data rate that is one of at least two known data rates; a frequency-selective filter assembly including at least a first filter coupled to the input interface to pass a signal at one of the two known data rates when at least a preselected difference of spectral power at a preselected filtered frequency of the one known data rate exists relative to a signal having the other of the two known data rates; a signal detector to detect the passed frequency and output a data rate signal~~

A data rate detector, comprising: an input interface to receive a digital signal having a data rate that is one of N known data rates; a passing frequency-selective filter assembly coupled to the input interface and including N-1 tunable bandpass filters, each tunable bandpass filter corresponding to a different one of the N known data rates; and each tunable bandpass filter configured to pass a signal when a selected spectral power difference exists at the bandpass frequency between the data rate of the digital signal and a selected one of the other N known data rates; and N-1 signal detectors each coupled to a corresponding one of the N-1 tunable bandpass filters; and each signal detector configured to detect the passed signal from the corresponding tunable bandpass filter and each signal detector configured to output a data rate signal related to the passed signal; and wherein each bandpass filter includes a reference clock coupled

thereto; at least one feedback path to ~~the input interface~~ **a tunable bandpass filter** to ~~**adapt to**~~ **adjust** the ~~passed~~ **bandpass** frequency to optimize transmission in response to the data rate signal; and, a host interface to transmit the data rate signal outside the data rate detector.

Conclusion

1. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (800) 786-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pairdirect.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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